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Illinois
Environmental
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Division of Public Water Supplies
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Groundwater Quality Protection Program

Joppa
FACILITY NUMBER 1270100
WELL SITE SURVEY REPORT

Division of Public Water Supplies

IEPA/PWS/95-029

GROUNDWATER QUALITY PROTECTION PROGRAM:

Joppa
FACILITY NUMBER 1270100
WELL SITE SURVEY REPORT

Presented by:

Division of Public Water Supplies

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INTRODUCTION

This report has been prepared by the Illinois Environmental Protection Agency (Agency) pursuant to Section 17.1 of the Illinois Environmental Protection Act (Act). The report summarizes information about your facility and samples collected and analyzed from your well(s). The well site survey provides an inventory of the area around the well(s) to help increase your awareness of potential hazards to the groundwater utilized by your facility. This information and technical data will assist you in developing and implementing local groundwater protection measures authorized by the Act.

FACILITY DESCRIPTION AND GEOLOGIC PROFILE OF WELL SITES

Joppa has one active public water supply well. The facility produces 72,000 gallons per day to an estimated population of 531. See Table I for a description of the well. The well utilizes a shallow bedrock aquifer overlain by predominantly till, discontinuous sand and gravel locally present within 50 feet of land surface for well no. 1 and thick, permeable sand and gravel within 20 feet of land surface for well no. 2. Permeability is the ability of a soil or sediment to transmit fluids. A detailed description and geologic profile is found in the Facility Wells Report (Appendix C).

TABLE 1

Well I.D.	Setback		Status	Capacity (gpm) (MGD)	Specific Capacity (gpm/ft)	Treatment	Aquifer	Well Depth (Ft.)	Well Logs Avail.
	Min. (Ft.)	Max. (Ft.)							
Well #1 (70900)	200		I (3/82)	NA	NA	Cl	Shallow Bedrock	448	No
Well #2 (70901)	400		A	190.1 .274	NA	Cl,Fl	Shallow Bedrock	240	Yes

A=Active; I=Inactive; SB=Standby

GROUNDWATER SAMPLING/MONITORING HISTORY

The public water supply well no. 2 at Joppa was sampled as part of the Statewide Groundwater Monitoring Network on December 16, 1986. The well samples were analyzed for inorganic chemicals (IOC) and volatile organic and aromatic chemicals (VOC/VOA). The VOC/VOA anayses performed detected no quantifiable levels of organic chemcials in the well. The IOC analyses performed found the water from the well to have elevated levels of iron which is not uncommon for similar wells in the area. Well no. 1 was also sampled for (IOC). The IOC analyses performed found the water from the well to meet all general use guidelines.

SURVEY METHODS AND PROCEDURES

The detailed well site survey consists of an aerial photographic map and inventory sheets (Appendix B), that relate information about potential sources, routes and possible problem sites to your water supply well(s). The location of potential sources, routes, possible problem sites, water supply wells, minimum setback zones, and 1,000 foot survey area are all displayed on the aerial photographic map.

The first page of each survey consists of a summary description and geologic profile for each well. The second and following pages of the survey inventory units within and bordering a 1,500 foot radius of the wellhead. A unit is defined as any device, mechanism, equipment, or area (exclusive of land utilized for agricultural production). The Agency five-digit well number is associated with a unit or map code, and then classified. The classification codes relate to definitions of potential contamination sources and routes as defined in the Illinois Groundwater Protection Act (see Groundwater Primer pages 18-19). The distance and direction of the unit from the wellhead is also indicated.

Survey Results and Findings:
The well site survey of Joppa was conducted on January 28, 1992 by Carl Kamp Environmental Protection Specialist from the Agency's Springfield Office. The following describes the results and findings for Joppa.

Joppa well #1 (70900)
The survey area is rural consisting of moderate density residential housing, open spaces and the Ohio River. The well is located east of town. There is one visible potential source , route , or possible problem site within the minimum setback zone (200 feet). This site is an Old Creosote Operation (map code 5) located 125 feet northwest of the well. Four potential sources or possible problems sites are located within the maximum survey area (1500 feet). These sites are Veach Oil Co. (map code 1) located 1300 feet northwest of the well, City Hall/Firehouse (map code 3) located 1525 feet northwest of the well, Roy Peck Standard (map code 4) located 1500 feet northwest of the well, and an Unauthorized Dump Area (map code 6) located 1425 feet northeast of the well.

Joppa well #2 (70901)
The survey area is rural consisting of moderate density residential housing, open spaces and the Ohio River. The well is located north of the WTP. There is one visible potential source , route , or possible problem site within the minimum setback zone (400 feet). This site is Roy Peck Standard (map code 4) located 400 feet northwest of the well. Four potential sources or possible problems sites are located within the maximum survey area (1500 feet). These sites are Veach Oil Co. (map code 1) located 1050 feet northeast of the well, an Old Gas Station (map code 2) located 1075 feet north of the well, City Hall/Firehouse (map code 3) located 500 feet northwest of the well, and an Old Creosote Operation (map code 5) located 1000 feet east of the well.

SUMMARY

The well site survey conducted indicates that there are several potential sources/sites that could pose a hazard to groundwater utilized by the Joppa public water wells.

-Two sites with underground storage of fuel: Veach Oil Company and the City Hall/Firehouse.

-Other areas of concern may be: an Old Gas Station (may have tanks still in place), an Old Creosote Operation and an Unauthorized Dump Area.

The Illinois Environmental Protection Act provides minimum protection zones for your wells. These minimum protection zones are regulated by the Agency. The Act also authorizes county and municipal officials the opportunity to provide maximum protection zones up to 1,000 feet. The responsibility for the control would then be assumed by the local officials through adoption of a maximum setback zone ordinance.

Maximum setback zones prohibit the siting of new potential primary sources of groundwater contamination. A maximum setback up to 1,000 feet could expand the regulatory coverage of certain existing and new activities. These controls could be implemented upon the adoption of proposed regulations by the Illinois Pollution Control Board.

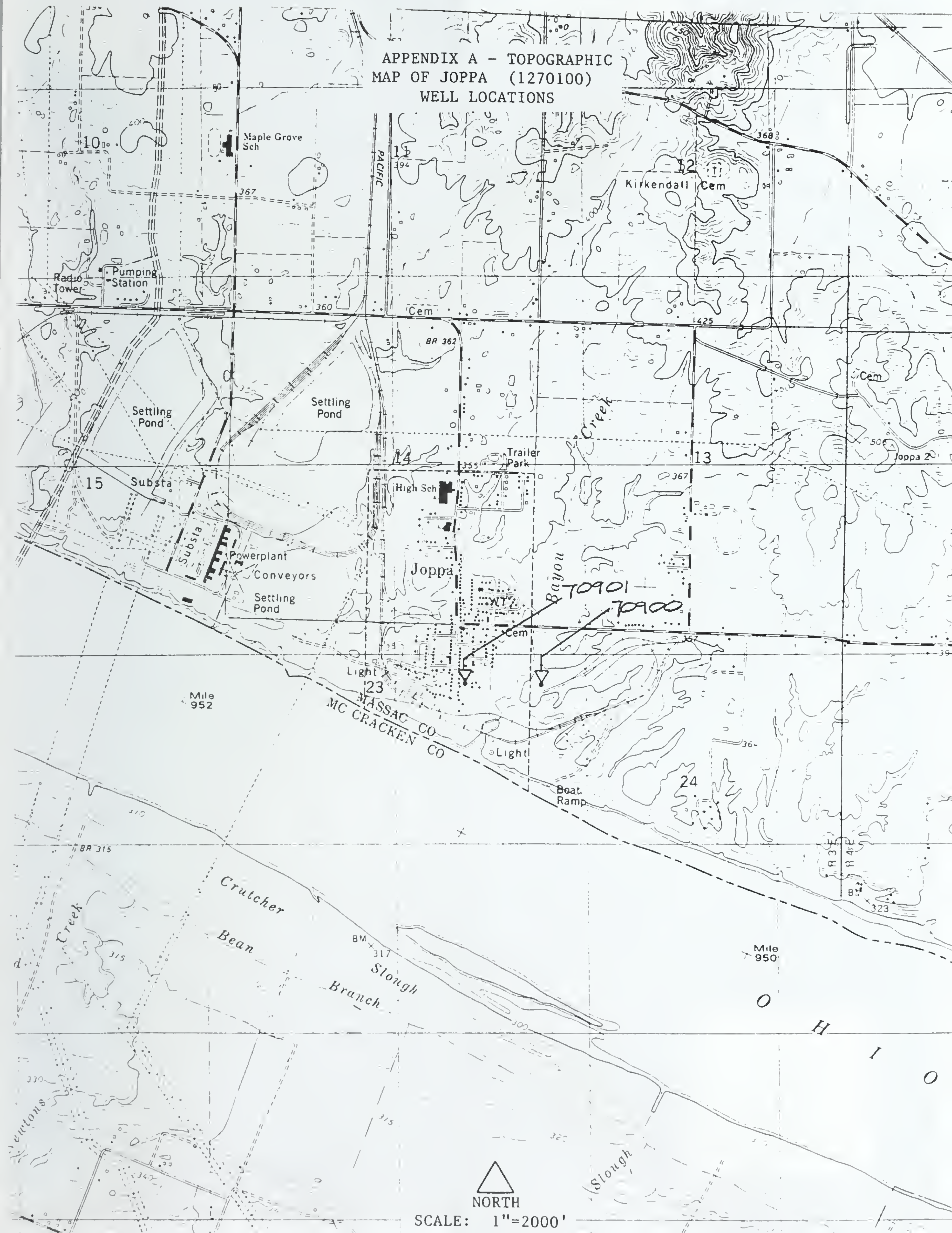
RECOMMENDATIONS

The Agency strongly urges Joppa to consider establishing a maximum setback zone ordinance for its wells. Maximum setback zones prohibit the siting of new potential primary sources of groundwater contamination up to 1000 feet from respective wellheads. To aid you in the development of further regulatory coverage for your well supply, the Agency prepared a "Maximum Setback Zone Workbook" that provides detailed case studies of how to establish maximum setback zones. This text and further technical assistance is readily available form the Agency and the Illinois State Water Survey.

Local governments are also encouraged to consider conducting groundwater protection needs assessments. Any county or municipality having a population less than 25,000 or 5,000 persons respectively, may request the Agency to conduct a hazard review in lieu of a need's assessment. The Agency may issue an "advisory of groundwater contamination hazard" if a significant hazard to the public health or the environment exists.

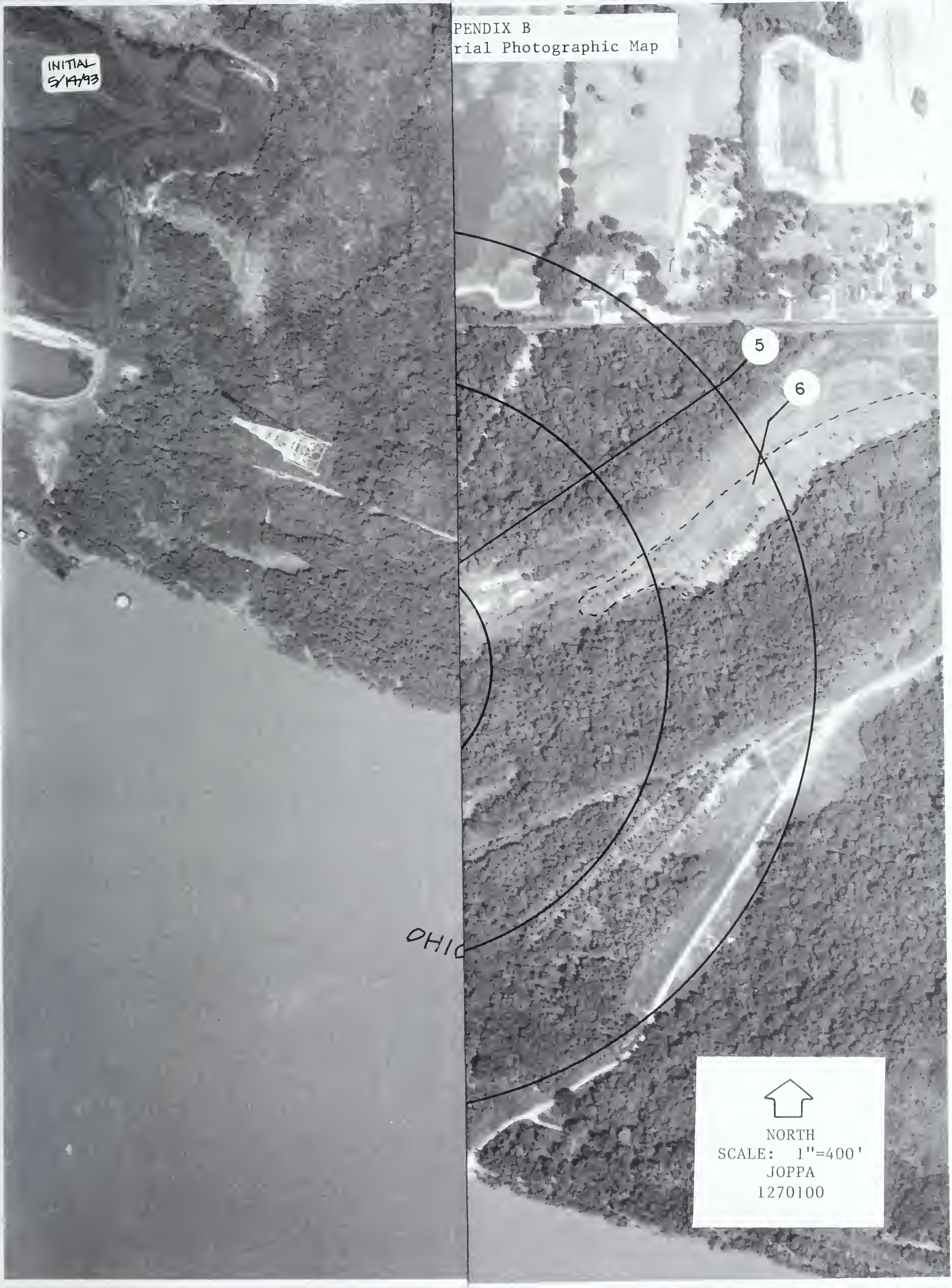
TECHNICAL APPENDICES

APPENDIX A - TOPOGRAPHIC MAP OF JOPPA (1270100) WELL LOCATIONS



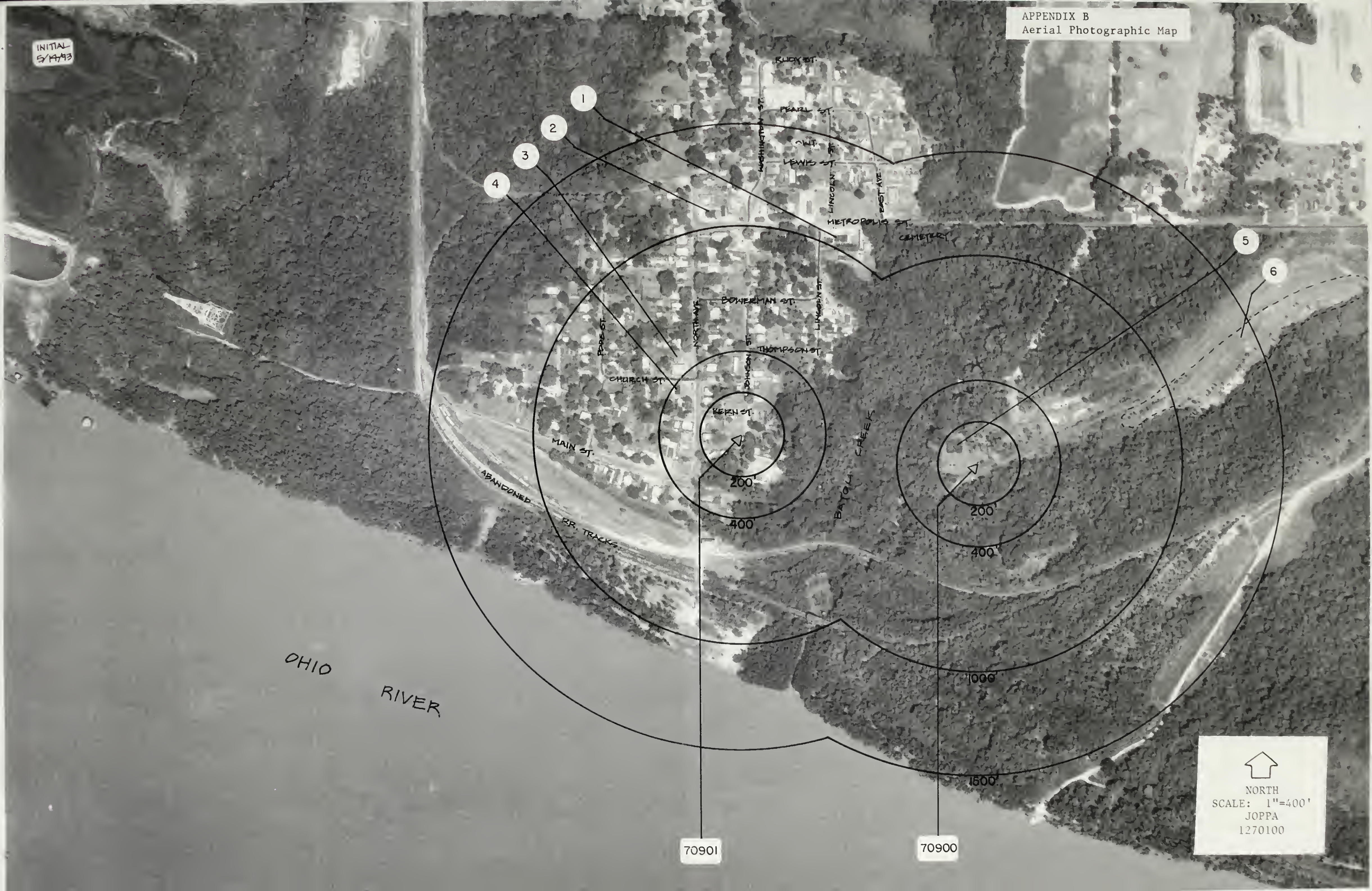
PENDIX B
rial Photographic Map

INITIAL
5/14/93



NORTH
SCALE: 1"=400'
JOPPA
1270100

APPENDIX B
Aerial Photographic Map



Appendix B1 - WELL SITE SUMMARY DESCRIPTION AND GEOLOGIC PROFILE
Joppa Well No. 1 (IEPA #70900)

SURVEYOR: Kamp
SURVEY DATE: 1-28-92
ADDRESS: Sue Sandusky, Mayor
Joppa
P.O. Box 191
Joppa, IL 62953

AGENCY WELL NO: 70900
WELL NAME & DESC: well #1
TREATMENT APPLICATION POINT: 01
FACILITY NO. & NAME: 1270100 - Joppa
FACILITY PHONE CONTACT: 618-543-7320

LOCATION: TWP, RNG, SECTION, 10 ACRE PLOT: 15S, 03E, 23, 1H
DISTANCE FROM CORNER: 500S, 500E
QUAD SHEET CODE & NAME: 285A - Joppa
MIN. SETBACK: 200 feet
MAX. SETBACK:

SURFICIAL GEOLOGIC SUSCEPTIBILITY RATING: C5-Predominantly till with discontinuous sand and gravel locally present within 50 feet of land surface.
AGE OF WELL: NA
WELL DEPTH: 448 feet
CASING DEPTH: NA
AQUIFER CODE: 3040 - Shallow Bedrock
MULTPLE AQUIFER (Y,N): No
SUMMARY DESCRIPTION OF 1,000' RADIUS AREA: The survey area is rural with moderate density residential housing, open spaces and the Ohio River.

INTERVIEW(S) NAME-ADDRESS-AFFILIATION-TELEPHONE NO:

APPENDIX B1 - INVENTORY & SYNOPSIS OF UNIT(S) Joppa Well No. 1 (IEPA #70900)

*CLASSF KEY

MIN. ZONE	OUTSIDE MIN. ZONE
PP = POTENTIAL PRIMARY	OP = POTENTIAL PRIMARY
PS = POTENTIAL SECONDARY	OS = POTENTIAL SECONDARY
RI = ROUTE	OR = ROUTE
CC = CERTIFIED	CC = CERTIFIED
XI = UNKNOWN	OX = UNKNOWN
CU = CLEANUP	CU = CLEANUP

WELL NO. - MAP CODE - CLASSF*: 70900-01-OS
NAME & ADDRESS OF UNIT OWNER: Veach Oil Company, Metropolis St., Joppa, Il 62953
DESCRIPTION AND COMMENTS: Service Station, 4 registered underground storage tank on site OSFM #7-023246.
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 1300 feet northwest of the well

WELL NO. - MAP CODE - CLASSF*: 70900-02
NAME & ADDRESS OF UNIT OWNER: an Old Gas Station, Metropolis St., Joppa, IL 62953
DESCRIPTION AND COMMENTS: old gas station
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 1750 feet northwest of the well

WELL NO. - MAP CODE - CLASSF*: 70900-03-OS
NAME & ADDRESS OF UNIT OWNER: City Hall/Firehouse, North Ave., Joppa, IL 62953
DESCRIPTION AND COMMENTS: City Hall and a firestation, 1 registered underground storage tank on site OSFM #7-002482.
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 1525 northwest of the well

WELL NO. - MAP CODE - CLASSF*: 70900-04
NAME & ADDRESS OF UNIT OWNER: Roy Peck Standard, Church St., Joppa, Il 62953
DESCRIPTION AND COMMENTS: An Old Gas Station/Garage.
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 1500 feet northwest of the well

WELL NO. - MAP CODE - CLASSF*: 70900-05
NAME & ADDRESS OF UNIT OWNER: Old Creosote Operation, Joppa, Il 62953
DESCRIPTION AND COMMENTS: Creosote Operation, Remedial Project.
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 125 feet northwest of the well

WELL NO. - MAP CODE - CLASSF*: 70900-06
NAME & ADDRESS OF UNIT OWNER: Unauthorized Dump Area, Joppa, IL 62953
DESCRIPTION AND COMMENTS: General Landfill
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 1425 feet northeast of the well

Appendix B2 - WELL SITE SUMMARY DESCRIPTION AND GEOLOGIC PROFILE
Joppa Well No. 2 (IEPA #70901)

SURVEYOR: Kamp
SURVEY DATE: 1-28-92
ADDRESS: Sue Sandusky, Mayor
Joppa
P.O. Box 191
Joppa, IL 62953

AGENCY WELL NO: 70901
WELL NAME & DESC: well #2
TREATMENT APPLICATION POINT: 02
FACILITY NO. & NAME: 1270100 - Joppa
FACILITY PHONE CONTACT: 618-543-7320

LOCATION: TWP, RNG, SECTION, 10 ACRE PLOT: 15S, 03E, 24, 8H
DISTANCE FROM CORNER: 350S, 400W
QUAD SHEET CODE & NAME: 285A - Joppa
MIN. SETBACK: 400 feet
MAX. SETBACK:

SURFICIAL GEOLOGIC SUSCEPTIBILITY RATING: A2-Thick, permeable sand and gravel within 20 feet of land surface.
AGE OF WELL: 1962
WELL DEPTH: 240 feet
CASING DEPTH: 179 feet
AQUIFER CODE: 3040 - Shallow Bedrock
MULTPLE AQUIFER (Y,N): No
SUMMARY DESCRIPTION OF 1,000' RADIUS AREA: The survey area is rural with moderate density residential housing, open spaces and the Ohio River.

INTERVIEW(S) NAME-ADDRESS-AFFILIATION-TELEPHONE NO:

APPENDIX B2 - INVENTORY & SYNOPSIS OF UNIT(S) Joppa Well No. 2 (IEPA #70901)

*CLASSF KEY

MIN. ZONE	OUTSIDE MIN. ZONE
PP = POTENTIAL PRIMARY	OP = POTENTIAL PRIMARY
PS = POTENTIAL SECONDARY	OS = POTENTIAL SECONDARY
RI = ROUTE	OR = ROUTE
CC = CERTIFIED	CC = CERTIFIED
XI = UNKNOWN	OX = UNKNOWN
CU = CLEANUP	CU = CLEANUP

WELL NO. - MAP CODE - CLASSF*: 70901-01-OS
NAME & ADDRESS OF UNIT OWNER: Veach Oil Company, Metropolis St., Joppa, Il 62953
DESCRIPTION AND COMMENTS: Service Station, 4 registered underground storage tank on site OSFM #7-023246.
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 1050 feet northeast of the well

WELL NO. - MAP CODE - CLASSF*: 70901-02
NAME & ADDRESS OF UNIT OWNER: an Old Gas Station, Metropolis St., Joppa, IL 62953
DESCRIPTION AND COMMENTS: old gas station
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 1075 feet north of the well

WELL NO. - MAP CODE - CLASSF*: 70901-03-OS
NAME & ADDRESS OF UNIT OWNER: City Hall/Firehouse, North Ave., Joppa, IL 62953
DESCRIPTION AND COMMENTS: City Hall and a firestation, 1 registered underground storage tank on site OSFM #7-002482.
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 500 northwest of the well

WELL NO. - MAP CODE - CLASSF*: 70901-04
NAME & ADDRESS OF UNIT OWNER: Roy Peck Standard, Church St., Joppa, Il 62953
DESCRIPTION AND COMMENTS: An Old Gas Station/Garage.
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 400 feet northwest of the well

WELL NO. - MAP CODE - CLASSF*: 70901-05
NAME & ADDRESS OF UNIT OWNER: Old Creosote Operation, Joppa, Il 62953
DESCRIPTION AND COMMENTS: Creosote Operation, Remedial Project.
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 1000 feet east of the well

WELL NO. - MAP CODE - CLASSF*: 70901-06
NAME & ADDRESS OF UNIT OWNER: Unauthorized Dump Area, Joppa, IL 62953
DESCRIPTION AND COMMENTS: General Landfill
PRE OR POST (Y,N): Yes
DISTANCE AND DIRECTION: 2475 feet northeast of the well

APPENDIX C

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                                                  ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
REPORT:  PWGWP053                                    DIVISION OF PUBLIC WATER SUPPLIES                                  PAGE:          2
MODULE:  PWGWM027                                          FACILITY WELLS REPORT                                        DATE:  09/16/91


    FACILITY:  1270100   JOPPA


    ------------------------- OWNER --------------------------       ------------------- OFFICIAL CUSTODIAN ------------------

    HENRY MORRIS

    MAYOR - VILLAGE HALL

    PO BOX 191

    JOPPA                    IL   62953


    WELL: 70900  WELL 1 EAST                                    STATUS: INACTIVE* BACKUP       DEPTH(FT):  448
          LATITUDE: N37 12 15.0              LONGITUDE: W088 50 17.5                 TWP: 15S  RNG: 03E  SEC: 24  PLOT: 8H

          SUSCEPTIBILITY - LAND BURIAL: C5   SUSCEPTIBILITY - LAND SPREADING:       --- MINIMUM SETBACK(FT): 200* ---
          AQUIFERS: MISSISSIPPIAN SYSTEM

    WELL: 70901  WELL 2 50 YDS N WTP                            STATUS: ACTIVE                 DEPTH(FT):  240
          LATITUDE: N37 12 13.0              LONGITUDE: W088 50 38.0                 TWP: 15S  RNG: 03E  SEC: 23  PLOT: 1H

          SUSCEPTIBILITY - LAND BURIAL: A2   SUSCEPTIBILITY - LAND SPREADING:       --- MINIMUM SETBACK(FT): 0400 ---
          AQUIFERS: MISSISSIPPIAN SYSTEM




    SUSCEPTIBILITY CODES
          LAND BURIAL: C5 = PREDOMINANTLY TILL WITH DISCONTINUOUS SAND AND GRAVEL LOCALLY PRESENT WITHIN 50 FT OF LAND
                            SURFACE.
                       A2 = THICK, PERMEABLE SAND AND GRAVEL WITHIN 20 FT OF LAND SURFACE.

    *NOTE:  INACTIVE WELLS SHOULD EITHER BE RETROFITTED FOR USE OR PROPERLY ABANDONED.  INACTIVE WELLS WHICH ARE IMPROPERLY
            ABANDONED ARE CONSIDERED POTENTIAL ROUTES ACCORDING TO P.A. 85-0863.
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APPENDIX D

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                                        ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
REPORT:  PWGWP048                          DIVISION OF PUBLIC WATER SUPPLIES                                          PAGE:        11
MODULE:  PWGWM026                          SELECTED SAMPLE EXPANDED REPORT                                            DATE:  09/16/91

  FACILITY:  1270100 JOPPA                                     STATUS: A    PUBLIC: Y    COMM: Y    TYPE WATER: G
       TAP:                                                    STATUS:
  RAW SRCE:                                                    STATUS:

      SAMPLE NO: B9185450U    LOCATION: WELL 2                                    COLL DATE: 12/20/89     DELIVERED BY:
      SMPL TYPE: RAW         COLLECTOR: FS                                        LAB RCVD: 03/28/90      RECEIVED BY:
      SMPL PURP: 1-ROUTINE    COMMENTS:                                           LAB COMPL:            LAB SUPERVISOR:
      SMPL PROG: C-CHEMICAL  OBSRVATNS:                                         SMPL PERIOD: 12/89           FUND CODE:

    ANALYSIS  RSLT -------STORET-------                                                      --------STANDARDS--------    TRIGGER
       ID      NO    NO     DESCRIPTION                                     UNITS     RESULT    DRINK WTR      RAW WTR       LEVEL

                   00095  CONDUCTIVITY(EC)-LAB(UMHOS/CM @ 25 C                        510.000
                   00403  PH LABORATORY UNITS                                           7.800
                   00410  ALKALINITY,TOTAL MG/L AS CACO3                              275.000
                   00610  NITROGEN,AMMONIA TOTAL MG/L AS N                              0.460
                   00630  NITRATE & NITRITE TOTAL MG/L AS N                             0.100 <     10.000
                   00720  CYANIDE,TOTAL MG/L AS CN                                      0.005 <      0.200
                   00900  HARDNESS,EDTA MG/L AS CACO3                                 265.000
                   00916  CALCIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP             75.000
                   00927  MAGNESIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP           17.000
                   00929  SODIUM,TOTAL RECOVERABLE MG/L AS NA ANAL BY ICP              10.000
                   00937  POTASSIUM,TOTAL RECOVERABLE MG/L AS K ANAL BY ICP             1.700
                   00940  CHLORIDE,TOTAL MG/L AS CL                                     3.800
                   00945  SULFATE,TOTAL MG/L AS SO4                                    10.000 <
                   00951  FLUORIDE,TOTAL MG/L AS F                                      0.260        4.000
                   00956  SILICA,TOTAL MG/L AS SIO2                                    13.000
                   01002  ARSENIC,TOTAR RECOVERABLE UG/L AS AS                          3.000       50.000
                   01007  BARIUM,TOTAL RECOVERABLE UG/L AS BA ANAL BY ICP             297.000     1000.000
                   01012  BERYLLIUM,TOTAL RECOVERABLE UG/L AS BE ANAL BY ICP            1.000 <
                   01022  BORON,TOTAL RECOVERABLE UG/L AS B ANAL BY ICP                50.000 <
                   01027  CADMIUM,TOTAL RECOVERABLE UG/L AS CD ANAL BY ICB              3.000 <     10.000
                   01034  CHROMIUM,TOTAL RECOVERABLE UG/L ASCR ANAL BY ICB              5.000 <     50.000
                   01037  COBALT,TOTAL RECOVERABLE UG/L AS CO ANAL BY ICP               5.000 <
                   01042  COPPER,TOTAL RECOVERABLE UG/L AS CU ANAL BY ICP               5.000 <   5000.000
                   01045  IRON,TOTAL RECOVERABLE, UG/L AS FEANAL BY ICP              1306.000     1000.000*
                   01051  LEAD,TOTAL RECOVERABLE UG/L AS PB                             5.000 <     50.000
                   01055  MANGANESE,TOTAL RECOVERABLE UG/L AS MN ANAL BY ICP          534.000      150.000*
                   01067  NICKEL,TOTAL RECOVERABLE UG/L AS NI ANAL BY ICP               5.000 <
                   01077  SILVER,TOTAL RECOVERABLE UG/L AS AG ANAL BY ICP               3.000 <     50.000
                   01082  STRONTIUM,TOTAL RECOVERABLE UG/L AS SR ANAL BY ICP          263.000
                   01087  VANADIUM,TOTAL RECOVERABLE UG/L ASV ANAL BY ICP               5.000 <
                   01092  ZINC,TOTAL RECOVERABLE UG/L AS ZN ANAL BY ICP                50.000 <   5000.000
                   01105  ALUMINUM,TOTAL RECOVERABLE UG/L ASAL ANAL BY ICP             68.000
                   01147  SELENIUM,TOTAL RECOVERABLE UG/L ASSE                          1.000 <     10.000
                   70300  RESIDUE,TOTAL FILTERABLE @180 C,MG/L                        295.000
                   71900  MERCURY,TOTAL UG/L AS HG                                      0.050 <      2.000
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                                      ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
REPORT:  FWGWP048                      DIVISION OF PUBLIC WATER SUPPLIES                                    PAGE:         12
MODULE:  PWGWM026                       SELECTED SAMPLE EXPANDED REPORT                                     DATE:   09/16/91

  FACILITY:  127010J JOPPA                                        STATUS: A   PUBLIC: Y    COMM: Y    TYPE WATER: G
      TAP:          01 WELL NO 1 (EAST)                           STATUS: A
  RAW SRCE:      70900 WELL 1 EAST                                STATUS: I

     SAMPLE NO: 8024703      LOCATION: WELL #1                                      COLL DATE: 12/21/83    DELIVERED BY:
     SMPL TYPE: RAW          COLLECTOR: B RUSSELL                                    LAB RCVD: 02/14/84     RECEIVED BY:
     SMPL PURP: 1-ROUTINE     COMMENTS:                                              LAB COMPL:          LAB SUPERVISOR:
     SMPL PROG: I-GWM INDRG OBSRVATNS:                                             SMPL PERIOD: 12/83        FUND CODE:

    ANALYSIS  RSLT -------STORET-------                                                   -------STANDARDS-------     TRIGGER
       ID      NO     NO     DESCRIPTION                                   UNITS      RESULT    DRINK WTR      RAW WTR       LEVEL

                   00095  CONDUCTIVITY(EC)-LAB(UMHOS/CM @ 25 C                        490.000
                   00403  PH LABORATORY UNITS                                           7.400
                   00410  ALKALINITY,TOTAL MG/L AS CACO3                              276.000
                   00610  NITROGEN,AMMONIA TOTAL MG/L AS N                              0.280
                   00630  NITRATE & NITRITE TOTAL MG/L AS N                             0.100 <    10.000
                   00720  CYANIDE,TOTAL MG/L AS CN                                      0.005 <     0.200
                   00900  HARDNESS,EDTA MG/L AS CACO3                                 238.000
                   00916  CALCIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP             75.000
                   00927  MAGNESIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP           17.000
                   00929  SODIUM,TOTAL RECOVERABLE MG/L AS NA ANAL BY ICP              11.000
                   00937  POTASSIUM,TOTAL RECOVERABLE MG/L AS K ANAL BY ICP             1.400
                   00940  CHLORIDE,TOTAL MG/L AS CL                                     3.000
                   00945  SULFATE,TOTAL MG/L AS SO4                                    10.000 <
                   00951  FLUORIDE,TOTAL MG/L AS F                                      0.300       4.000
                   00956  SILICA,TOTAL MG/L AS SIO2                                    12.000
                   01002  ARSENIC,TOTAR RECOVERABLE UG/L AS AS                          1.000      50.000
                   01007  BARIUM,TOTAL RECOVERABLE UG/L AS BA ANAL BY ICP             294.000    1000.000
                   01012  BERYLLIUM,TOTAL RECOVERABLE UG/L AS BE ANAL BY ICP            0.500 <
                   01022  BORON,TOTAL RECOVERABLE UG/L AS B ANAL BY ICP                50.000 <
                   01027  CADMIUM,TOTAL RECOVERABLE UG/L AS CD ANAL BY ICB              3.000 <    10.000
                   01034  CHROMIUM,TOTAL RECOVERABLE UG/L ASCR ANAL BY ICB              5.000 <    50.000
                   01037  COBALT,TOTAL RECOVERABLE UG/L AS CO ANAL BY ICP               5.000 <
                   01042  COPPER,TOTAL RECOVERABLE UG/L AS CU ANAL BY ICP               5.000 <  5000.000
                   01045  IRON,TOTAL RECOVERABLE, UG/L AS FEANAL BY ICP              1100.000    1000.000*
                   01051  LEAD,TOTAL RECOVERABLE UG/L AS PB                             5.000 <    50.000
                   01055  MANGANESE,TOTAL RECOVERABLE UG/L AS MN ANAL BY ICP          479.000     150.000*
                   01067  NICKEL,TOTAL RECOVERABLE UG/L AS NI ANAL BY ICP               5.000 <
                   01077  SILVER,TOTAL RECOVERABLE UG/L AS AG ANAL BY ICP               5.000 <    50.000
                   01082  STRONTIUM,TOTAL RECOVERABLE UG/L AS SR ANAL BY ICP          284.000
                   01087  VANADIUM,TOTAL RECOVERABLE UG/L ASV ANAL BY ICP               5.000 <
                   01092  ZINC,TOTAL RECOVERABLE UG/L AS ZN ANAL BY ICP                 5.000 <  5000.000
                   01105  ALUMINUM,TOTAL RECOVERABLE UG/L ASAL ANAL BY ICP             50.000 <
                   01147  SELENIUM,TOTAL RECOVERABLE UG/L ASSE                          1.000 <    10.000
                   70300  RESIDUE,TOTAL FILTERABLE @180 C,MG/L                        265.000
                   70304  TOTAL DISSOLVED SOLIDS MG/L BY EC                           290.000
                   71900  MERCURY,TOTAL UG/L AS HG                                      0.100 <     2.000

     SAMPLE NO: 097061300    LOCATION: JOPPA/WELL I EAST                            COLL DATE: 01/24/89    DELIVERED BY: MAIL
     SMPL TYPE: RAW         COLLECTOR: F SANDERS                                     LAB RCVD: 01/25/89     RECEIVED BY: D V
     SMPL PURP: 9-VARIANCE   COMMENTS: VOC'S                                        LAB COMPL: 02/17/89  LAB SUPERVISOR: JTH
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FACILITY: 1270100 JOPPA

*** CONTINUED ***

SMPL PROG: V-VOC　　OBSRVATNS: 2 VOC　　SMPL PERIOD: 01/89　　FUND CODE: PW30

ANALYSIS	RSLT	-------STORET-------				-------STANDARDS-------		TRIGGER
ID	NO	NO	DESCRIPTION	UNITS	RESULT	DRINK WTR	RAW WTR	LEVEL
431WV00	001	32106	CHLOROFORM UG/L GC/MS	UG/L	1.000 <			
431WV00	002	32101	BROMODICHLOROMETHANE UG/L CG/MS	UG/L	1.000 <			
431WV00	003	32105	DIBROMOCHLOROMETHANE UG/L GC/MS	UG/L	1.000 <			
431WV00	004	32104	BROMOFORM UG/L CG/MS	UG/L	1.000 <			
431WV00	005	34423	METHYLENE CHLORIDE UG/L	UG/L	1.000 <			
431WV00	006	34501	1,1-DICHLOROETHYLENE UG/L GC/MS	UG/L	1.000 <	7.000		
431WV00	007	34496	1,1-DICHLOROETHANE UG/L GC/MS	UG/L	1.000 <			
431WV00	008	34546	TRANS-1,2-DICHLOROETHYLENE UG/L GC/MS	UG/L	1.000 <			
431WV00	009	34531	1,2-DICHLOROETHANE UG/L	UG/L	1.000 <	5.000		
431WV00	010	34506	1,1,1-TRICHLOROETHANE UG/L GC/MS	UG/L	1.000 <	200.000		
431WV00	011	32102	CARBON TETRACHLORIDE UG/L CG/MS	UG/L	1.000 <	5.000		
431WV00	012	39180	TRICHLOROETHYLENE UG/L	UG/L	1.000 <	5.000		
431WV00	013	34475	TETRACHLOROETHYLENE UG/L GC/MS	UG/L	1.000 <			
431WV00	014	34301	CHLOROBENZENE UG/L	UG/L	1.000 <			
431WV00	015	34716	DICHLOROBENZENE UG/L	UG/L	1.000 <			
431WV00	016	78124	BENZENE UG/L	UG/L	1.000 <	5.000		
431WV00	017	78131	TOLUENE UG/L	UG/L	1.000 <			
431WV00	018	78113	ETHYLBENZENE UG/L	UG/L	1.000 <			
431WV00	019	81551	XYLENE UG/L	UG/L	1.000 <			

SAMPLE NO: D86930700　　LOCATION: JOPPA/WELL 1 EAST　　COLL DATE: 11/22/88　　DELIVERED BY: MAIL
SMPL TYPE: RAW　　COLLECTOR: C SANDERS　　LAB RCVD: 11/23/88　　RECEIVED BY: D V
SMPL PURP: 9-VARIANCE　　COMMENTS: VOC'S　　LAB COMPL: 12/07/88　　LAB SUPERVISOR: JTH
SMPL PROG: V-VOC　　OBSRVATNS: 2 VOC　　SMPL PERIOD: 11/88　　FUND CODE: PW30

ANALYSIS	RSLT	-------STORET-------				-------STANDARDS-------		TRIGGER
ID	NO	NO	DESCRIPTION	UNITS	RESULT	DRINK WTR	RAW WTR	LEVEL
431WV00	001	32106	CHLOROFORM UG/L GC/MS	UG/L	1.000 <			
431WV00	002	32101	BROMODICHLOROMETHANE UG/L CG/MS	UG/L	1.000 <			
431WV00	003	32105	DIBROMOCHLOROMETHANE UG/L GC/MS	UG/L	1.000 <			
431WV00	004	32104	BROMOFORM UG/L CG/MS	UG/L	1.000 <			
431WV00	005	34423	METHYLENE CHLORIDE UG/L	UG/L	1.000 <			
431WV00	006	34501	1,1-DICHLOROETHYLENE UG/L GC/MS	UG/L	1.000 <	7.000		
431WV00	007	34496	1,1-DICHLOROETHANE UG/L GC/MS	UG/L	1.000 <			
431WV00	008	34546	TRANS-1,2-DICHLOROETHYLENE UG/L GC/MS	UG/L	1.000 <			
431WV00	009	34531	1,2-DICHLOROETHANE UG/L	UG/L	1.000 <	5.000		
431WV00	010	34506	1,1,1-TRICHLOROETHANE UG/L GC/MS	UG/L	1.000 <	200.000		
431WV00	011	32102	CARBON TETRACHLORIDE UG/L CG/MS	UG/L	1.000 <	5.000		
431WV00	012	39180	TRICHLOROETHYLENE UG/L	UG/L	1.000 <	5.000		
431WV00	013	34475	TETRACHLOROETHYLENE UG/L GC/MS	UG/L	1.000 <			
431WV00	014	34301	CHLOROBENZENE UG/L	UG/L	1.000 <			
431WV00	015	34716	DICHLOROBENZENE UG/L	UG/L	1.000 <			
431WV00	016	78124	BENZENE UG/L	UG/L	1.000 <	5.000		
431WV00	017	79131	TOLUENE UG/L	UG/L	1.000 <			

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 FACILITY:  1270100 JOPPA                                          *** CONTINUED ***

     431WV00  018  78113  ETHYLBENZENE UG/L                          UG/L      1.000 <
     431WV00  019  81551  XYLENE UG/L                                UG/L      1.000 <

     SAMPLE NO: 086727200     LOCATION: JOPPA/WELL 1 EAST                       COLL DATE: 09/07/88     DELIVERED BY: MAIL
     SMPL TYPE: RAW          COLLECTOR: C SANDERS                               LAB RCVD: 09/08/88       RECEIVED BY: D V
     SMPL PURP: 9-VARIANCE    COMMENTS: VOC'S                                  LAB COMPL: 09/30/88  LAB SUPERVISOR: JTM
     SMPL PROG: V-VOC        OBSRVATNS: 2 VOC                               SMPL PERIOD: 09/88          FUND CODE: PW30

    ANALYSIS  RSLT -------STORET-------                                             -------STANDARDS-------     TRIGGER
       ID      NO     NO     DESCRIPTION                          UNITS    RESULT   DRINK WTR     RAW WTR       LEVEL

     431WV00  001  32106  CHLOROFORM UG/L GC/MS                      UG/L      1.000 <
     431WV00  002  32101  BROMODICHLOROMETHANE UG/L CG/MS            UG/L      1.000 <
     431WV00  003  32105  DIBROMOCHLOROMETHANE UG/L GC/MS            UG/L      1.000 <
     431WV00  004  32104  BROMOFORM UG/L CG/MS                       UG/L      1.000 <
     431WV00  005  34423  METHYLENE CHLORIDE UG/L                    UG/L      1.000 <
     431WV00  006  34501  1,1-DICHLOROETHYLENE UG/L GC/MS            UG/L      1.000 <     7.000
     431WV00  007  34496  1,1-DICHLOROETHANE UG/L GC/MS              UG/L      1.000 <
     431WV00  008  34546  TRANS-1,2-DICHLOROETHYLENE UG/L GC/MS      UG/L      1.000 <
     431WV00  009  34531  1,2-DICHLOROETHANE UG/L                    UG/L      1.000 <     5.000
     431WV00  010  34506  1,1,1-TRICHLOROETHANE UG/L GC/MS           UG/L      1.000 <   200.000
     431WV00  011  32102  CARBON TETRACHLORIDE UG/L CG/MS            UG/L      1.000 <     5.000
     431WV00  012  39180  TRICHLOROETHYLENE UG/L                     UG/L      1.000 <     5.000
     431WV00  013  34475  TETRACHLOROETHYLENE UG/L GC/MS             UG/L      1.000 <
     431WV00  014  34301  CHLOROBENZENE UG/L                         UG/L      1.000 <
     431WV00  015  34716  DICHLOROBENZENE UG/L                       UG/L      1.000 <
     431WV00  016  78124  BENZENE UG/L                               UG/L      1.000 <     5.000
     431WV00  017  78131  TOLUENE UG/L                               UG/L      1.000 <
     431WV00  018  78113  ETHYLBENZENE UG/L                          UG/L      1.000 <
     431WV00  019  81551  XYLENE UG/L                                UG/L      1.000 <

     SAMPLE NO: 086453200     LOCATION: JOPPA/WELL 1 EAST                       COLL DATE: 04/28/88     DELIVERED BY: MAIL
     SMPL TYPE: RAW          COLLECTOR: C SANDERS                               LAB RCVD: 05/02/88       RECEIVED BY: D V
     SMPL PURP: 9-VARIANCE    COMMENTS: VOC'S                                  LAB COMPL: 05/27/88  LAB SUPERVISOR: JTM
     SMPL PROG: V-VOC        OBSRVATNS: 2 VOC                               SMPL PERIOD: 04/88          FUND CODE: PW30

    ANALYSIS  RSLT -------STORET-------                                             -------STANDARDS-------     TRIGGER
       ID      NO     NO     DESCRIPTION                          UNITS    RESULT   DRINK WTR     RAW WTR       LEVEL

     431WV00  001  32106  CHLOROFORM UG/L GC/MS                      UG/L      1.000 <
     431WV00  002  32101  BROMODICHLOROMETHANE UG/L CG/MS            UG/L      1.000 <
     431WV00  003  32105  DIBROMOCHLOROMETHANE UG/L GC/MS            UG/L      1.000 <
     431WV00  004  32104  BROMOFORM UG/L CG/MS                       UG/L      1.000 <
     431WV00  005  34423  METHYLENE CHLORIDE UG/L                    UG/L      1.000 <
     431WV00  006  34501  1,1-DICHLOROETHYLENE UG/L GC/MS            UG/L      1.000 <     7.000
     431WV00  007  34496  1,1-DICHLOROETHANE UG/L GC/MS              UG/L      1.000 <
     431WV00  008  34546  TRANS-1,2-DICHLOROETHYLENE UG/L GC/MS      UG/L      1.000 <
     431WV00  009  34531  1,2-DICHLOROETHANE UG/L                    UG/L      1.000 <     5.000
     431WV00  010  34506  1,1,1-TRICHLOROETHANE UG/L GC/MS           UG/L      1.000 <   200.000
     431WV00  011  32102  CARBON TETRACHLORIDE UG/L CG/MS            UG/L      1.000 <     5.000
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                                      ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
REPORT:  PWGWP048                      DIVISION OF PUBLIC WATER SUPPLIES                                      PAGE:        15
MODULE:  PWGWM026                       SELECTED SAMPLE EXPANDED REPORT                                       DATE:  09/16/91

  FACILITY:  1270100 JOPPA                                 *** CONTINUED ***

     431WV00   012   39180   TRICHLOROETHYLENE UG/L                         UG/L        1.000 <      5.000
     431WV00   013   34475   TETRACHLOROETHYLENE UG/L GC/MS                 UG/L        1.000 <
     431WV00   014   34301   CHLOROBENZENE UG/L                             UG/L        1.000 <
     431WV00   015   34716   DICHLOROBENZENE UG/L                           UG/L        1.000 <
     431WV00   016   78124   BENZENE UG/L                                   UG/L        1.000 <      5.000
     431WV00   017   78131   TOLUENE UG/L                                   UG/L        1.000 <
     431WV00   018   78113   ETHYLBENZENE UG/L                              UG/L        1.000 <
     431WV00   019   81551   XYLENE UG/L                                    UG/L        1.000 <

     SAMPLE NO: D86302300     LOCATION: JOPPA/WELL 1 EAST                                COLL DATE: 02/25/88    DELIVERED BY: MAIL
     SMPL TYPE: RAW          COLLECTOR: C SANDERS                                         LAB RCVD: 02/29/88      RECEIVED BY: O V
     SMPL PURP: 9-VARIANCE    COMMENTS: VOC'S                                            LAB COMPL: 03/25/88  LAB SUPERVISOR: JTH
     SMPL PROG: V-VOC        OBSRVATNS: 2 VOC                                          SMPL PERIOD: 02/88          FUND CODE: PW30

    ANALYSIS  RSLT -------STORET-------                                                          -------STANDARDS-------      TRIGGER
       ID      NO     NO      DESCRIPTION                                   UNITS      RESULT    DRINK WTR       RAW WTR        LEVEL

     431WV00   001   32106   CHLOROFORM UG/L GC/MS                          UG/L        1.000 <
     431WV00   002   32101   BROMODICHLOROMETHANE UG/L CG/MS                UG/L        1.000 <
     431WV00   003   32105   DIBROMOCHLOROMETHANE UG/L GC/MS                UG/L        1.000 <
     431WV00   004   32104   BROMOFORM UG/L CG/MS                           UG/L        1.000 <
     431WV00   005   34423   METHYLENE CHLORIDE UG/L                        UG/L        1.000 <
     431WV00   006   34501   1,1-DICHLOROETHYLENE UG/L GC/MS                UG/L        1.000 <      7.000
     431WV00   007   34496   1,1-DICHLOROETHANE UG/L GC/MS                  UG/L        1.000 <
     431WV00   008   34546   TRANS-1,2-DICHLOROETHYLENE UG/L GC/MS          UG/L        1.000 <
     431WV00   009   34531   1,2-DICHLOROETHANE UG/L                        UG/L        1.000 <      5.000
     431WV00   010   34506   1,1,1-TRICHLOROETHANE UG/L GC/MS               UG/L        1.000 <    200.000
     431WV00   011   32102   CARBON TETRACHLORIDE UG/L CG/MS                UG/L        1.000 <      5.000
     431WV00   012   39180   TRICHLOROETHYLENE UG/L                         UG/L        1.000 <      5.000
     431WV00   013   34475   TETRACHLOROETHYLENE UG/L GC/MS                 UG/L        1.000 <
     431WV00   014   34301   CHLOROBENZENE UG/L                             UG/L        1.000 <
     431WV00   015   34716   DICHLOROBENZENE UG/L                           UG/L        1.000 <
     431WV00   016   78124   BENZENE UG/L                                   UG/L        1.000 <      5.000
     431WV00   017   78131   TOLUENE UG/L                                   UG/L        1.000 <
     431WV00   018   78113   ETHYLBENZENE UG/L                              UG/L        1.000 <
     431WV00   019   81551   XYLENE UG/L                                    UG/L        1.000 <
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                                     ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
REPORT:  PWGWP048                     DIVISION OF PUBLIC WATER SUPPLIES                                        PAGE:          16
MODULE:  PWGWM026                     SELECTED SAMPLE EXPANDED REPORT                                          DATE:    09/16/91

  FACILITY:  1270100 JOPPA                                        STATUS: A    PUBLIC: Y    COMM: Y    TYPE WATER: G
       TAP:          02 WELL 2 50 YDS N OF WTP                    STATUS: A
  RAW SRCE:       70901 WELL 2 50 YDS N WTP                       STATUS: A

     SAMPLE NO: Z000022      LOCATION: WELL                                       COLL DATE: 12/16/86    DELIVERED BY:
     SMPL TYPE: RAW         COLLECTOR: IEPA SMPL COLLECTOR                         LAB RCVD: 00/00/00     RECEIVED BY:
     SMPL PURP: 5-SPEC/OTHR  COMMENTS:                                            LAB COMPL: 00/00/00  LAB SUPERVISOR:
     SMPL PROG: I-GWM INORG OBSRVATNS:                                          SMPL PERIOD: 12/86          FUND CODE:

    ANALYSIS  RSLT -------STORET-------                                                 -------STANDARDS-------      TRIGGER
       ID      NO    NO     DESCRIPTION                                UNITS    RESULT    DRINK WTR      RAW WTR      LEVEL

     0000001  001  00610  NITROGEN,AMMONIA TOTAL MG/L AS N                          0.280
     0000001  002  00630  NITRATE & NITRITE TOTAL MG/L AS N                         0.120       10.000
     0000001  003  00665  PHOSPHORUS, TOTAL MG/L AS P                               0.010
     0000001  004  00720  CYANIDE,TOTAL MG/L AS CN                                  0.010 <      0.200
     0000001  005  00916  CALCIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP         75.000
     0000001  006  00927  MAGNESIUM,TOTAL RECOVERABLE MG/L AS CA ANAL BY ICP       17.000
     0000001  007  00929  SODIUM,TOTAL RECOVERABLE MG/L AS NA ANAL BY ICP           8.900
     0000001  008  00937  POTASSIUM,TOTAL RECOVERABLE MG/L AS K ANAL BY ICP         0.840
     0000001  009  00940  CHLORIDE,TOTAL MG/L AS CL                                 3.300
     0000001  010  00945  SULFATE,TOTAL MG/L AS SO4                                10.000 <
     0000001  011  00951  FLUORIDE,TOTAL MG/L AS F                                  0.290        4.000
     0000001  012  00956  SILICA,TOTAL MG/L AS SI02                                12.000
     0000001  013  01002  ARSENIC,TOTAR RECOVERABLE UG/L AS AS                      2.000       50.000
     0000001  014  01007  BARIUM,TOTAL RECOVERABLE UG/L AS BA ANAL BY ICP         288.000     1000.000
     0000001  015  01012  BERYLLIUM,TOTAL RECOVERABLE UG/L AS BE ANAL BY ICP        0.500 <
     0000001  016  01022  BORON,TOTAL RECOVERABLE UG/L AS B ANAL BY ICP            50.000 <
     0000001  017  01027  CADMIUM,TOTAL RECOVERABLE UG/L AS CD ANAL BY ICB          3.000 <     10.000
     0000001  018  01034  CHROMIUM,TOTAL RECOVERABLE UG/L ASCR ANAL BY ICB          5.000 <     50.000
     0000001  019  01037  COBALT,TOTAL RECOVERABLE UG/L AS CO ANAL BY ICP           5.000 <
     0000001  020  01042  COPPER,TOTAL RECOVERABLE UG/L AS CU ANAL BY ICP           5.000 <   5000.000
     0000001  021  01045  IRON,TOTAL RECOVERABLE, UG/L AS FEANAL BY ICP          1149.000     1000.000*
     0000001  022  01051  LEAD,TOTAL RECOVERABLE UG/L AS PB                         5.000 <     50.000
     0000001  023  01055  MANGANESE,TOTAL RECOVERABLE UG/L AS MN ANAL BY ICP      483.000      150.000*
     0000001  024  01067  NICKEL,TOTAL RECOVERABLE UG/L AS NI ANAL BY ICP           5.000 <
     0000001  025  01077  SILVER,TOTAL RECOVERABLE UG/L AS AG ANAL BY ICP           3.000 <     50.000
     0000001  026  01082  STRONTIUM,TOTAL RECOVERABLE UG/L AS SR ANAL BY ICP      246.000
     0000001  027  01087  VANADIUM,TOTAL RECOVERABLE UG/L ASV ANAL BY ICP           5.000 <
     0000001  028  01092  ZINC,TOTAL RECOVERABLE UG/L AS ZN ANAL BY ICP            50.000 <   5000.000
     0000001  029  01105  ALUMINUM,TOTAL RECOVERABLE UG/L ASAL ANAL BY ICP         50.000 <
     0000001  030  01147  SELENIUM,TOTAL RECOVERABLE UG/L ASSE                      1.000 <     10.000
     0000001  031  32730  PHENOLS, TOTAL RECOVERABLE UG/L                           5.000 <
     0000001  032  71900  MERCURY,TOTAL UG/L AS HG                                  0.050 <      2.000
     0000001  033  00010  WATER TEMPERATURE DEG C                                  15.500
     0000001  034  00059  FLOW (PUMPING) RATE GAL/MIN                             120.000
     0000001  035  00090  OXIDATION-REDUCTION POTENTIAL (EH) MILLIVOLTS            78.000-
     0000001  036  00095  CONDUCTIVITY(EC)-LAB(UMHOS/CM @ 25 C                    450.000
     0000001  037  00400  PH PH UNITS                                               6.900
     0000001  038  72004  FLOW (PUMPING) TIME PRIOR TO SAMPLING MIN               385.000
     0000001  039  90410                                                          268.000

     SAMPLE NO: Z000021      LOCATION: WELL                                       COLL DATE: 12/16/86    DELIVERED BY:
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REPORT:  PWGWP048                    ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
MODULE:  PWGWM026                     DIVISION OF PUBLIC WATER SUPPLIES                               PAGE:        17
                                       SELECTED SAMPLE EXPANDED REPORT                                DATE:  09/16/91
  FACILITY:  1270100 JOPPA                                     *** CONTINUED ***

     SMPL TYPE: RAW          COLLECTOR: IEPA SMPL COLLECTOR
     SMPL PURP: 5-SPEC/OTHR   COMMENTS:                                          LAB RCVD: 00/00/00     RECEIVED BY:
     SMPL PROG: V-VOC        OBSRVATNS:                                        LAB COMPL: 00/00/00  LAB SUPERVISOR:
                                                                              SMPL PERIOD: 12/86          FUND CODE:
    ANALYSIS   RSLT -------STORET-------
      ID        NO     NO     DESCRIPTION                                                       -------STANDARDS-------      TRIGGER
                                                                      UNITS         RESULT     DRINK WTR      RAW WTR         LEVEL

    0000001   001  32101  BROMODICHLOROMETHANE UG/L CG/MS                         1.000 <
    0000001   002  32102  CARBON TETRACHLORIDE UG/L CG/MS                         1.000 <      5.000
    0000001   003  32103  1,2-DICHLOROETHANE UG/L                                 1.000 <      5.000
    0000001   004  32104  BROMOFORM UG/L CG/MS                                    1.000 <
    0000001   005  32105  DIBROMOCHLOROMETHANE UG/L GC/MS                         1.000 <
    0000001   006  32106  CHLOROFORM UG/L GC/MS                                   1.000 <
    0000001   007  34010  TOLUENE UG/L                                            1.000 <
    0000001   008  34030  BENZENE UG/L                                            1.000 <      5.000
    0000001   009  34301  CHLOROBENZENE UG/L                                      1.000 <
    0000001   010  34371  ETHYLBENZENE UG/L                                       1.000 <
    0000001   011  34423  METHYLENE CHLORIDE UG/L                                 1.000 <
    0000001   012  34475  TETRACHLOROETHYLENE UG/L GC/MS                          1.000 <
    0000001   013  34496  1,1-DICHLOROETHANE UG/L GC/MS                           1.000 <
    0000001   014  34501  1,1-DICHLOROETHYLENE UG/L GC/MS                         1.000 <      7.000
    0000001   015  34506  1,1,1-TRICHLOROETHANE UG/L GC/MS                        1.000 <    200.000
    0000001   016  34546  TRANS-1,2-DICHLOROETHYLENE UG/L GC/MS                   1.000 <
    0000001   017  39180  TRICHLOROETHYLENE UG/L                                  1.000 <      5.000
    0000001   018  00010  WATER TEMPERATURE DEG C                                15.500
    0000001   019  00059  FLOW (PUMPING) RATE GAL/MIN                           120.000
    0000001   020  00090  OXIDATION-REDUCTION POTENTIAL (EH) MILLIVOLTS          78.000-
    0000001   021  00095  CONDUCTIVITY(EC)-LAB(UMHOS/CM @ 25 C                  450.000
    0000001   022  00400  PH PH UNITS                                             6.900
    0000001   023  72004  FLOW (PUMPING) TIME PRIOR TO SAMPLING MIN             385.000
    0000001   024  90410                                                        268.000
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APPENDIX E

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF PUBLIC WATER SUPPLIES
Inventory Sheet

Date Inventoried 3/10/82
Sheet 1 of 5
Supply JOPPA

e following information was taken directly from the llinois State Water Survey Bulletin 60-14... Public Ground Water Supplies in Massac County and is included with the Inventory for information only.

The village of Joppa (531) installed a public water supply in 1953. Two wells are in use. In 1955 there were 167 services, all metered; the average and maximum daily pumpages were 15,000 and 18,000 gpd, respectively. In 1972 there were 190 services, 50 percent metered; the estimated average daily pumpage was 50,000 gpd. The water is not treated.

WELL NO. 1, finished in limestone of Mississippian age, was completed to a depth of 448 ft. The well is located about 1650 ft east of the business district, approximately 500 ft S and 500 ft E of the NW corner of Section 24, T15S, R3E. The land surface elevation at the well is approximately 360 ft.

A 10-in. diameter hole was drilled to a depth of 75 ft and finished 6 in. in diameter from 75 to 448 ft. The well is cased with 10-in. pipe from 0.5 ft above the pumphouse floor to a depth of 75 ft and 6-in. pipe from 1 ft above land surface to an unknown depth.

A production test was conducted on December 9-10, 1952, by representatives of the village, the State Water Survey, and Rochester & Goodell, Consulting Engineers. After 24 hr of pumping at rates ranging from 73 to 91 gpm, the drawdown was 58.0 ft from a nonpumping water level of 31.0 ft below the pump base.

The pumping equipment presently installed is a Worthington vertical turbine pump (Serial No. A1411141) rated at 250 gpm at about 300 ft TDH and powered by a 30-hp 1750 rpm Fairbanks-Morse electric motor.

WELL NO. 2, finished in limestone of Mississippian age, was constructed in September 1962 to a depth of 176 ft and reportedly deepened in March 1963 to a depth of 240 ft by the S & B Drilling Co., Metropolis. The well is located in the southeast part of the village, approximately 350 ft S and 400 ft W of the NE corner of Section 23, T15S, R3E. The land surface elevation at the well is approximately 320 ft.

A 10-in. diameter hole was drilled to a depth of 179 ft and finished 8 in. in diameter from 179 to 240 ft. The well is cased with 10-in. steel pipe from 1 ft above land surface to a depth of 179 ft.

Before deepening, a production test was conducted on October 30, 1962, by representatives of the village and the State Water Survey. After 3 hr of pumping at rates of 172 to 160 gpm, the final drawdown was 73.0 ft from a nonpumping water level of 33.5 ft below land surface. Thirty min after pumping was stopped, the water level had recovered to 36.0 ft. On the basis of the production test data, it was estimated that this well would yield 150 gpm (216,000 gpd) on a long-term basis.

After deepening, a production test was conducted on April 10, 1963, by representatives of the village and the State Water Survey. After 4.6 hr of pumping at a rate of 100 gpm, the drawdown was 52.98 ft from a nonpumping water level of 25.12 ft below land surface. Fifteen min after pumping was stopped, the water level had recovered to 29.20 ft. On the basis of the production test data, it was estimated that this well would yield 100 gpm (144,000 gpd) on a long-term basis.

A drillers log of Well No. 2 follows:

Strata	*Thickness (ft)*	*Depth (ft)*
Soil	45	45
Gravel	59	104
Sand	30	134
Blue shale and mud	17	151
Broken lime with blue and gray mud	9	160
Blue mud and lime	5	165
Broken lime	11	176
Solid limestone	12	188
Broken limestone	10	198
Hard, solid limestone	10	208
Layers of solid limestone and broken stone	32	240

The pumping equipment presently installed consists of a 24-hp A. O. Smith electric motor, a 10-stage A. O. Smith turbine pump set at 157 ft and rated at 150 gpm, and 150 ft of 5-in. column pipe.

April 18, 1963

WELL PRODUCTION TEST
VILLAGE OF JOPPA, WELL NO. 2
MASSAC COUNTY

by

R. G. Jones, Field Engineer

Owner: Village of Joppa
Location: In the NE corner of Section 25, T. 15S., R. 3E.
Date Completed: Deepened in March 1963
Date of Test: April 10, 1963
Length of Test: 4 1/3 hours
Aquifer: Limestone

WELL DATA

PUMPED WELL

Well No: 2
Driller: S & B Drilling Company, Metropolis, Illinois
Depth: 240'
Hole Record: 10" 0-179', 8" 179-240'
Casing Record: 10" +1 to 179'
Pump and Power: A. O. Smith turbine pump, 10-stage set at 157', 25-hp. A. O. Smith electric motor
Measuring Point: Top of casing, +1' above LSD
Measuring Equipment: 4" orifice tube (Plate No. 13), steel tape and electric dropline
Temperature of Water: 59°F
Static Level: 26.12'

Remarks: This well has been deepened and recased since the production test on October 30, 1962.

DRILLER'S LOG

VILLAGE OF JOPPA, WELL NO. 2

Formation	From	To
Soil	0	45'
Gravel	45	104
Sand	104	134
Blue shale and mud	134	151
Broken lime with blue and gray mud	151	160
Blue mud and lime	160	165
Broken lime	165	176
Solid limestone	176	188
Broken limestone	188	198
Hard, solid limestone	198	208
Layers of solid limestone and broken stone	208	240

APPENDIX F

HAZARD REVIEW WORKSHEET

1. Unique I.D. Number 7 0 9 0 1 - 0 4 - _ _, Distance and Direction from the Wellhead 400 feet northwest of the well

2. Nature of Business Old Gas Station/Garage

3. DLPC Permit Number(s) and Description (e.g., RCRA, Generic, Solid Waste, UIC, etc.): None

4. DAPC Permit Number(s) and Description: None

5. DWPC Permit Numbers and Description (e.g., NPDES, Industrial Pre-Treatment, Sewer Plans, etc.): None

6. ERU Incidents and Description: None

7. ERU 313 Reports and Description: None

8. ESDA 302/303 Reports and Description: None

9. ESDA 311/312 Reports and Description: None

10. PWS compliance monitoring conducted and describe the results (e.g., VOC/VOA sample detects, etc.): None

11. ISFM list the underground storage tanks registered, provide the owner name & address:

Owner Name	Address

12. Is the site sewered or non-sewered? Sewered

If the site is not sewered, describe: ______

13. Has on-site past or present landfilling, land treating, or surface impoundment of waste, other than landscape waste or construction and demolition debris occured?

( ) Yes. If yes, describe: ______

(X) No.

14. Are there currently any on-site piles of special or hazardous waste?

( ) Yes. If yes, describe: ______

(X) No.

15. Are on-site piles of waste (other than special or hazardous wastes) managed according to Agency guidelines?

( ) Yes. If yes, describe: ______

(X) No.

16. Are there currently any underground storage tanks present on-site, and will any underground tanks be installed in the future?

( ) Yes. If yes, describe: ______

(X) No.

17(a). Has any situation(s) occurred at this site which resulted in a "release" of any hazardous substance or petroleum?

( ) Yes (continue to next question)
(X) No (stop here)

(b). Have any hazardous substances or petroleum, which were released, come into contact with the ground surface at this site? (Note--do not automatically exclude paved or otherwise covered areas that may still have allowed chemical substances to penetrate into the ground.)

( ) Yes (continue to next question)
( ) No (stop here)

(c). Have any of the following actions/events been associated with the release(s) referred to in question 17(b)?

( ) Hiring of a cleanup contractor to remove obviously contaminated materials including subsoils

( ) Replacement or major repair of damaged facilities (c). (continued)

( ) Assignment of in-house maintenance staff to remove obviously contaminated materials including subsoils

( ) Designation, by IEPA or the ESDA, of a release as "significant" under the Illinois Chemical Safety Act

( ) Reordering or other replenishment of inventory due to the amount of substance lost

( ) Temporary or more long-term monitoring of groundwater at or near the site

( ) Stop usage of an on-site or nearby water well because of offensive characteristics of the water

( ) Coping with fumes from subsurface storm drains or inside basements

( ) Signs of substances leaching out of the ground along the base of slopes or at other low points on or adjacent to the site

(d). The on-site release(s) may have been of sufficient magnitude to contaminate groundwaters. Summarize the problem.

18. Are there more than 100 gallons of either pesticides or organic solvents, or 10,000 gallons of any hazardous substance, or 30,000 gallons of petroleum present at any time?

( ) Yes. If yes, describe:

(x) No.

19. Do any of the regulated entities have groundwater monitoring systems, and have any exceeded compliance requirements?

( ) Yes. If yes, describe:

(x) No.

20. After considering all of the above criteria does this site potentially pose a hazard to groundwater?

( ) Yes. If yes, describe:

(x) No.

HAZARD REVIEW WORKSHEET

1. Unique I.D. Number 7 0 9 0 0 - 0 5 - _ _ , Distance and Direction from the Wellhead 125 feet northwest of the well

2. Nature of Business Creosote Operation

3. DLPC Permit Number(s) and Description (e.g., RCRA, Generic, Solid Waste, UIC, etc.): None

4. DAPC Permit Number(s) and Description: None

5. DWPC Permit Numbers and Description (e.g., NPDES, Industrial Pre-Treatment, Sewer Plans, etc.): None

6. ERU Incidents and Description: None

7. ERU 313 Reports and Description: None

8. ESDA 302/303 Reports and Description: None

9. ESDA 311/312 Reports and Description: None

10. PWS compliance monitoring conducted and describe the results (e.g., VOC/VOA sample detects, etc.): None

11. ISFM list the underground storage tanks registered, provide the owner name & address:

Owner Name	Address

12. Is the site sewered or non-sewered? Sewered

If the site is not sewered, describe:

13. Has on-site past or present landfilling, land treating, or surface impoundment of waste, other than landscape waste or construction and demolition debris occured?

( ) Yes. If yes, describe:

(X) No.

14. Are there currently any on-site piles of special or hazardous waste?

(X) Yes. If yes, describe: Creosote

( ) No.

15. Are on-site piles of waste (other than special or hazardous wastes) managed according to Agency guidelines?

( ) Yes. If yes, describe:

(X) No.

16. Are there currently any underground storage tanks present on-site, and will any underground tanks be installed in the future?

( ) Yes. If yes, describe:

(X) No.

17(a). Has any situation(s) occurred at this site which resulted in a "release" of any hazardous substance or petroleum?

(X) Yes (continue to next question)
( ) No (stop here)

(b). Have any hazardous substances or petroleum, which were released, come into contact with the ground surface at this site? (Note--do not automatically exclude paved or otherwise covered areas that may still have allowed chemical substances to penetrate into the ground.)

(X) Yes (continue to next question)
( ) No (stop here)

(c). Have any of the following actions/events been associated with the release(s) referred to in question 17(b)?

(X) Hiring of a cleanup contractor to remove obviously contaminated materials including subsoils

( ) Replacement or major repair of damaged facilities (c).(continued)

( ) Assignment of in-house maintenance staff to remove obviously contaminated materials including subsoils

( ) Designation, by IEPA or the ESDA, of a release as "significant" under the Illinois Chemical Safety Act

( ) Reordering or other replenishment of inventory due to the amount of substance lost

( ) Temporary or more long-term monitoring of groundwater at or near the site

( ) Stop usage of an on-site or nearby water well because of offensive characteristics of the water

( ) Coping with fumes from subsurface storm drains or inside basements

( ) Signs of substances leaching out of the ground along the base of slopes or at other low points on or adjacent to the site

(d). The on-site release(s) may have been of sufficient magnitude to contaminate groundwaters. Summarize the problem.

18. Are there more than 100 gallons of either pesticides or organic solvents, or 10,000 gallons of any hazardous substance, or 30,000 gallons of petroleum present at any time?

( ) Yes. If yes, describe:

(X) No.

19. Do any of the regulated entities have groundwater monitoring systems, and have any exceeded compliance requirements?

( ) Yes. If yes, describe:

(X) No.

20. After considering all of the above criteria does this site potentially pose a hazard to groundwater?

(X) Yes. If yes, describe: Per DLPC the soil and groundwater is still contaminated with creosote.

( ) No.

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